



# MY DATA

**Started in January 2004**

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# About MY NASA DATA



- A project that enables K-12 teachers and students, as well as citizen scientists, to explore the large volumes of data that NASA collects about the Earth from space.
- Students use scientific inquiry and math skills as they access and display microsets of the Earth System





# The MY NASA DATA Project: Patterns in Data



One long acronym!

**M**entoring and inquir**Y** using **NASA**  
**D**ata on **A**tmospheric and Earth  
**S**cience for **T**eachers and **A**mateurs

- ***Microsets*** of scientific data
- Mentor Network
- Open Source



# The MY NASA DATA Project: Patterns in Data

- What is a ***microset***?
  - One or a few parameters from a larger file
  - Time series for one location
  - File small enough for easy transfer
  - Format accessible to standard or free software
  - Static or custom-created

GOAL: Overcome the barriers to data  
exploration







# Tools we are using so far

- ASCII format
- Excel or other spreadsheet
- Live Access Server for custom microsets
  - Arranged by topic
  - Output as plot, text, GIS format ...
- IDL Virtual Machine (<http://www.rsinc.com>)





# Live Access Server (LAS)



+ MY NASA DATA HOME    + DATA ACCESS    + LESSON PLANS    + COMPUTER TOOLS    + SCIENCE FOCUS    + GLOSSARY

single  
data  
set

com-  
pare  
two

## Select Datasets

Show Variables

Set Constraints

View Output

Output Options

Previous Output

Define variable

About Live  
Access Server

LAS UI Version 6.4

[i](#) [Datasets](#) > [Atmosphere](#)

Click on a dataset to continue or an [i](#) for information about a dataset. [Help](#)

### Select dataset:

- [i](#) [Aerosols](#)
- [i](#) [Air Quality](#)
- [i](#) [Atmospheric Pressure](#)
- [i](#) [Atmospheric Radiation](#)
- [i](#) [Atmospheric Temperature](#)
- [i](#) [Clouds](#)



[+ Freedom of Information Act](#)  
[+ The President's Management Agenda](#)  
[+ FY2003 Agency Performance Report](#)  
[+ NASA Privacy Statement, Disclaimer,  
and Accessibility Certification](#)



NASA Official: **Lin H. Chambers**  
Last Updated: September 27, 2004  
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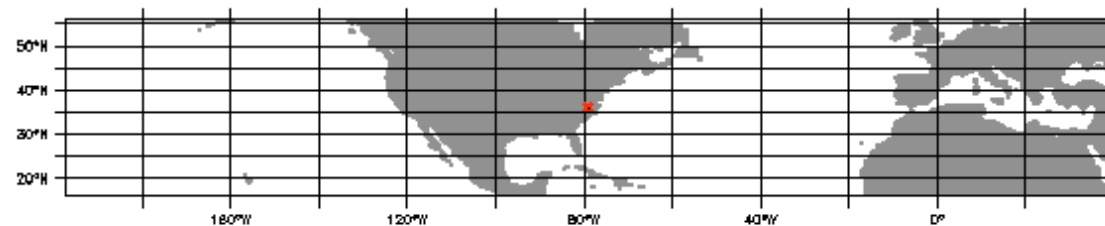
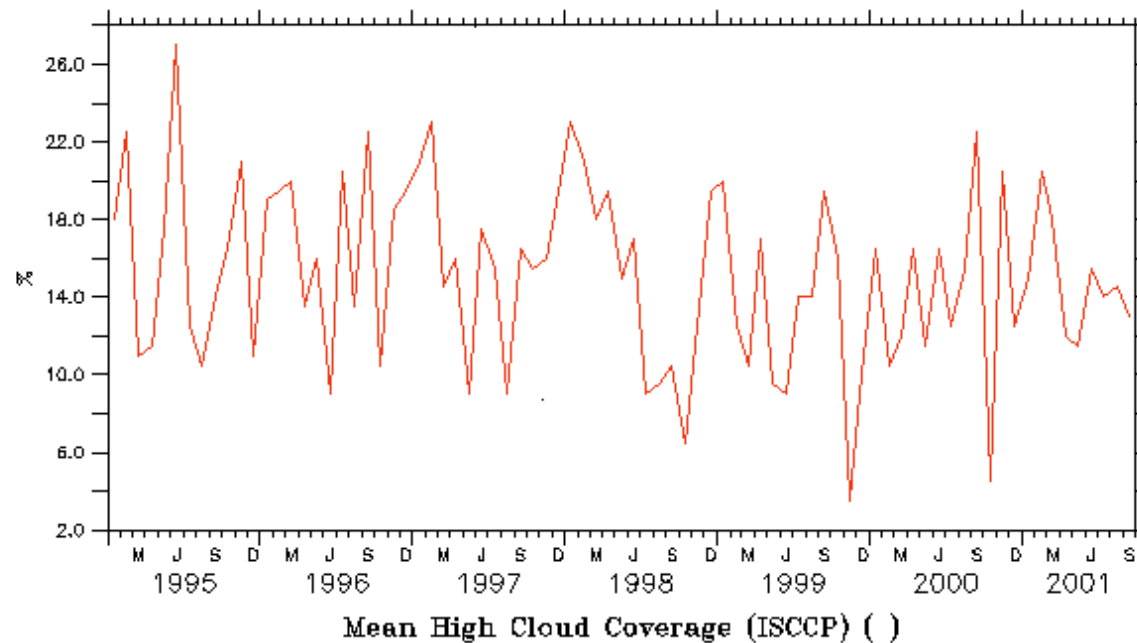


# Result

LAS 6.4.0/Ferret 5.70 -- NOAA/PMEL

LONGITUDE : 78.8W(-78.8)  
LATITUDE : 36.2N

DATA SET: ISCCPMonthly\_avg



[Send all plot output to main window](#)

[Open a new window for each plot](#)

[Permanent link to this plot/data](#)



# Mentor Network

- Scientifically or pedagogically literate e-mentors
- Available to consult with teachers on data use
  - Use of data in regular instruction
  - Use of data in science fair projects, etc...
- Registration form available on website
- Ask-a-Mentor page on website







# Open Source - Expanded

- Lesson plans from teachers (16 so far)
  - More in progress
- Projects and ideas
  - From students
  - From citizen scientists
  - Data use (using MY NASA DATA and others)
  - Data collection
    - GLOBE (<http://www.globe.gov>)
    - S'COOL (<http://scool.larc.nasa.gov>)
    - Other?
- Submission through on-line form or by email





# How to get involved

- MY NASA DATA  
(<http://mynasadata.larc.nasa.gov>)
  - Use posted lesson plans
  - We welcome feedback and suggestions!
  - Look for workshops at future teacher conferences
  - Join the e-Mentor network and help to answer questions
  - Contribute your own lesson plan

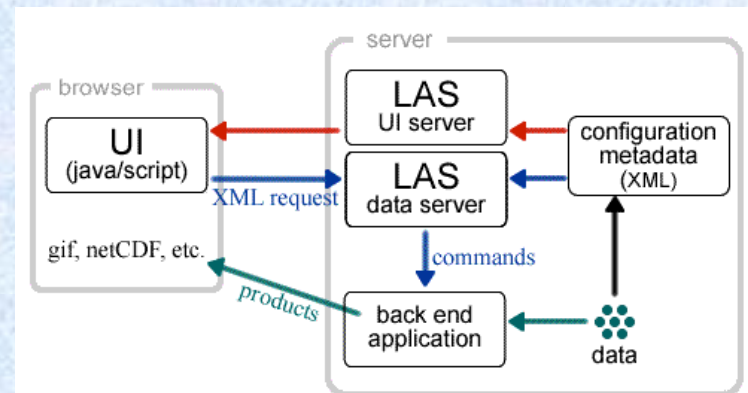






# What is LAS?

- Highly configurable Web server
- Flexible access to geo-referenced data
- Written in Perl, Java and Javascript
- XML configuration files, MySQL
- Ferret visualization application
- OPeNDAP client





# Who is using LAS?

- NOAA
- NASA
- NCAR
- U. S. Navy
- Dept. of Energy
- MY NASA DATA







# LAS enables the Web user

- Visualize data with on-the-fly graphics
- Make custom subsets of variables
- Make choice of output file formats
- Access metadata
- Compare and create variables
- Save or regenerate graphics



# LAS enables the Data Provider

- Unify access to multiple types of data
- Allow specialized visualization styles
- Offer custom data products on the fly
- Create thematic data categories
- Remedy metadata inadequacies





# How to create data

- From home page, click on *Live Access to data*

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

+ Visit NASA.gov  
+ Visit the ASDC Home Page

FIND IT @ NASA :  + GO

## MY NASA DATA

Mentoring and inquiry using NASA Data on Atmospheric and earth science for Teachers and Amateurs

+ ABOUT MY NASA DATA   + DATA ACCESS   + LESSON PLANS   + COMPUTER TOOLS   + SCIENCE FOCUS

**FEATURES**

**MY NASA DATA Teams with the Digital Learning Network**  
Schedule an interactive lesson for your own classroom!  
[+ Registration details](#)

**Create your own Microsets!**  
Try our Live Access Server to make custom microsets of earth science data  
[+ Live Access to data](#)

**Join Our Mentor Network**  
Help us to help others! Contribute lesson plans, computer tools and more  
[+ More Information](#)   [+ Ask A Mentor](#)   [+ FAQ page](#)

**Visit our Earth Science Glossary**  
Our glossary is available to expand your understanding of earth science  
[+ Science Glossary](#)

[Click here to see where our team members will be next!](#)

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Sea Surface Temperature  
Hurricane Alley, September 18, 2005




# How to create data

- From the Data Access page, click on *Live Access Server*

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AND SPACE ADMINISTRATION

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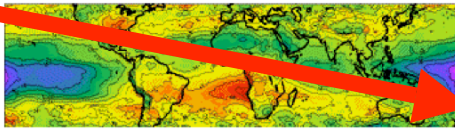


## MY NASA DATA

Mentoring and inquiry using NASA Data on Atmospheric and earth science for Teachers and Amateurs

+ MY NASA DATA HOME   + DATA ACCESS   + LESSON PLANS   + COMPUTER TOOLS   + SCIENCE FOCUS

FEATURES








The MY NASA DATA **Live Access Server** (LAS) is now available to create your own microsets for your class or your interests. The LAS contains over 127 parameters in atmospheric and earth science from five NASA scientific projects.


[+ Live Access Server](#)  
[+ Live Access Server Introduction](#)

NASA earth science satellite data has also been pre-packaged into easy-to-use data sets that contain appropriate content for K-12 classroom education or citizen scientist use. These **microsets** are accompanied by corresponding **lesson plans** and **computer tools**. The microsets have been made available by the NASA Langley Atmospheric Sciences Data Center (ASDC). The ASDC houses over 700 data sets which pertain to the Earth's radiation budget, clouds, aerosols and atmospheric chemistry. Please visit the [ASDC](#) web site for more information.

Please visit our **Science Focus** page for more information.

Microset Description	Resources
<a href="#">Area Coverage by Water Bodies around Earth's Equator</a>	 Lesson Plans  Computer Tools  Data Information  Science Glossary
<a href="#">Area Coverage by Mixed Forest, Urban and Water Bodies around Latitude 40N</a>	
<a href="#">Area Coverage by all CERES Surface Categories for a few Sample Locations</a>	
<a href="#">Cloud Layer Area Fraction during a Late Winter Storm</a>	
<a href="#">Net Radiation at Latitude 20N</a>	
<a href="#">Daily Cycle of Solar Zenith Angle in March</a>	
<a href="#">Temperature and Ozone Profile from SAGE-III</a>	
<a href="#">Weather Balloon data from August 5, 2004</a>	
<a href="#">Weather Balloon data from July 26, 2005</a>	

 + Freedom of Information Act

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# How to create data

- Choose the type of dataset you would like to explore by clicking on the dataset name
- For example, we are choosing Atmosphere

**MY NASA DATA**  
Mentoring and inquiry using NASA Data on Atmospheric and earth science for Teachers and Amateurs

ASDC Live Access Server

OF:NTAP (FUS) | THERMOS | Index | Search

+ MY NASA DATA HOME + DATA ACCESS + LESSON PLANS + COMPUTER TOOLS + SCIENCE FOCUS + GLOSSARY

single data set compare two

Select Datasets

Show Variables

Set Constraints

Previous Output

Define variable

About Live Access Server

LAS UI Version 6.3

Select dataset:

- Atmosphere
- Snow and Ice
- Surface

Click on a dataset to continue or an [i](#) for information about a dataset. [Help](#)

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# How to create data

- Now we choose the name of the dataset we want to explore
- For example we choose *Aerosols*

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ASDC Live Access Server [OP&NDAP \(FDS\)](#) | [THREDDS](#) | [Index](#) | Search:

+ MY NASA DATA HOME + DATA ACCESS + LESSON PLANS + COMPUTER TOOLS + SCIENCE FOCUS + GLOSSARY

[single data set](#) [compare two](#)

**Select datasets**

Show Variables  
Set Constraints  
Previous Output  
Define variable  
About Live Access Server  
LAS UI Version 6.5

[Datasets > Atmosphere](#)

Click on a dataset to continue or an [i](#) for information about a dataset. [Help](#)

**Select dataset:**

- [Aerosols](#)
- [Air Quality](#)
- [Atmospheric Pressure](#)
- [Atmospheric Radiation](#)
- [Atmospheric Temperature](#)
- [Clouds](#)

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# How to create data

- We now select the name of the variable(s) we want to explore;
- To select the variable, check the box(es) of the variable(s) you want
- Note-for this dataset there is only one option available

The screenshot shows the MY NASA DATA website interface. At the top, there is a banner with the text "MY NASA DATA" and "Mentoring and inquiry using NASA Data on Atmospheric and earth science for Teachers and Amateurs". Below the banner, there is a search bar and a "Go" button. The main navigation bar includes links for "MY NASA DATA HOME", "DATA ACCESS", "LESSON PLANS", "COMPUTER TOOLS", "SCIENCE FOCUS", and "GLOSSARY". The left sidebar contains a "single data set" button, a "compare two" button, and a "Show Variables" button. The main content area displays the breadcrumb "Datasets > Atmosphere > Aerosols" and a message: "Select a variable and then click **Next >** to proceed to the Constraints page. Click the GLOSSARY menu bar for acronym explanations." Below this, the "Dataset variable(s):" section shows a checkbox selected for "Monthly Aerosol Optical Depth (MSR)". A red arrow points from the "Show Variables" button in the sidebar to the "Monthly Aerosol Optical Depth (MSR)" variable. At the bottom, there is a "FIRST GOV" logo and links to "Freedom of Information Act", "The President's Management Agenda", "FY2003 Agency Performance Report", and "Privacy Policy and Important Notices". The NASA logo and "NASA Official: Lin H. Chambers" are also present.



# How to create data

- Now you choose your output options:
  - View (Hofmoeller or Time series)
  - Output (Color plot or line plot)
  - Region (Global or Continent)
  - Time (date range)
- For example, we choose *Longitude-Latitude map, Color plot, Full Region, June 2004*

The screenshot shows the ASDC Live Access Server interface. The top navigation bar includes links for OPeNDAP (FDS), THREDDS, Index, and a search bar. Below this is a menu with options: MY NASA DATA HOME, DATA ACCESS, LESSON PLANS, COMPUTER TOOLS, SCIENCE FOCUS, and GLOSSARY. The main content area is titled "Datasets > Atmosphere > Aerosols" and shows the variable "Monthly Aerosol Optical Depth (MSR)". A sidebar on the left contains links for "single data set", "compare two", "Select Datasets", "Show Variables", "Set Constraints", "Previous Output", "Define variables", "About Live Access Server", and "LAS UI Version 6.5". The main panel prompts the user to "Select your desired view (geometry of output) and output (type of product). Then set the 4-D region (lon-lat-depth-time) and any additional constraints." The configuration options are as follows: "Select view:" is set to "Longitude-Latitude map (xy)"; "Select output:" is set to "Color plot"; "Select region:" is set to "Full Region" with a "Go" button; a world map is displayed; "Select time:" is set to "2004-06" with a "52" in a text box; "Select options:" includes "Image format" (Default), "Plot size" (default), "View interpolation" (Off), "Show reference map" (Default), "Evaluate expression" (empty text box), "Land fill style" (Default), "Palette" (Default), "Color fill style" (Default), "Color fill levels" (empty text box), and "Contour levels" (empty text box). A "Next >" button is located on the right side of the main panel.





# How to create data: result

